

What Is Claimed Is:

1. An apparatus comprising:

a base;

a blow molding extruder mounted to the base, the  
5 extruder having a head that is configured and adapted to  
extrude parisons therefrom;

a carriage, the carriage being movably mounted to the  
base in a manner such that the carriage is movable along a  
non-linear path between first and second positions relative to  
10 the extruder and in a manner such that the carriage maintains  
a constant rotational orientation relative to the base as the  
carriage moves along the non-linear path; and

first and second molding stations, each of the first  
and second molding stations comprising at least two mold  
15 components that together form a blow mold, each of the first  
and second molding stations being mounted to the carriage in a  
manner such that the first and second molding stations move  
with the carriage relative to the base as the carriage moves  
along the non-linear path between the first and second  
20 positions, the first molding station being positionable  
beneath the head of the extruder when the carriage is in the  
first position, the second molding station being positionable  
beneath the head of the extruder when the carriage is in the  
second position.

2. An apparatus in accordance with claim 1 wherein the first and second molding stations are each movably connected to the carriage.

3. An apparatus in accordance with claim 1 further  
5 comprising first and second connecting members, each of the first and second connecting members having first and second pivot connections and a longitudinal length separating the first and second pivot connections, the longitudinal length of the first connecting member being equal to the longitudinal  
10 length of the second connecting member, the first pivot connection of each of the first and second connecting members pivotally connecting the respective connecting member to the carriage about a respective carriage axis, the second pivot connection of each of the first and second connecting members  
15 pivotally connecting the respective connecting member to the base about a respective base axis, the carriage axes being spaced from each other by a distance, the base axes being spaced from each other by the distance.

4. An apparatus in accordance with claim 3 further  
20 comprising a rigid fluid conduit operatively connected to the base and to the carriage, the fluid conduit having first and second pivot connections and a longitudinal length separating the first and second pivot connections, the first pivot

connection of the fluid conduit pivotally connecting the fluid conduit to the carriage about a carriage axis, the second pivot connection of the fluid conduit pivotally connecting the fluid conduit to the base about a base axis, the longitudinal  
5 length of the fluid conduit being equal to the longitudinal length of the first connecting member, the carriage axis about which the fluid conduit is pivotally connected being in-line with the carriage axes about which the first and second connecting members are pivotally connected, the base axis  
10 about which the fluid conduit is pivotally connected being in-line with the base axes about which the first and second connecting members are pivotally connected.

5. An apparatus in accordance with claim 3 further comprising a fluid actuated piston, the piston being movable  
15 between extended and retracted positions, the piston being pivotally connected to the base and to at least one the first and second connecting members in a manner such that movement of the piston between retracted and extended positions causes movement of the carriage along the non-linear path relative to  
20 the extruder.

6. An apparatus in accordance with claim 5 wherein the piston constitutes a first piston and wherein the apparatus further comprises a second fluid actuated piston, the second

piston being movable between extended and retracted positions, the second piston being pivotally connected to the base and to at least one of the first and second connecting members in a manner such that movement of the second piston between

5 retracted and extended positions causes movement of the carriage along the non-linear path relative to the extruder, the second piston being configured to move from its extended position to its retracted position as the first piston moves from its retracted position to its extended position and vice  
10 versa.

7. An apparatus in accordance with claim 3 wherein the first and second molding stations are each movably connected to the carriage.

8. A method comprising:

15 providing a blow molding apparatus, the blow molding apparatus having a base, a blow molding extruder, a carriage, and first and second molding stations, the blow molding extruder being mounted to the base and having a head that is configured and adapted to extrude parisons therefrom, the  
20 carriage being movably mounted to the base, each of the first and second molding stations comprising at least two mold components that together form a blow mold;

inserting a parison from the head of the blow molding

extruder into the blow mold of the first molding station with the carriage positioned in a first position relative to the base;

moving the carriage in non-linear manner relative to the base from the first position to a second position while maintaining a constant rotational orientation between the carriage and the base; and

inserting a parison from the head of the blow molding extruder into the blow mold of the second molding station with the carriage positioned in the second position relative to the base.

9. A method in accordance with claim 8 wherein the step of providing the blow molding apparatus occurs in a manner such that the first and second molding stations are each movable relative to the carriage, and wherein the method further comprises moving the first and second molding stations relative to the carriage.

10. A method in accordance with claim 8 wherein the step of providing the blow molding apparatus occurs in a manner such that the blow molding apparatus comprises first and second connecting members, each of the first and second connecting members being pivotally connected to the carriage and to the base in a manner defining four parallel and spaced

apart axes, and wherein the step of moving the carriage in non-linear manner relative to the base from the first position to a second position occurs by pivoting each of the first and second connecting members relative to the carriage while  
5 simultaneously pivoting each of the first and second connecting members relative to the base.

11. A method in accordance with claim 10 wherein the step of providing the blow molding apparatus occurs in a manner such that the blow molding apparatus comprises a fluid  
10 actuated piston, the piston being movable between extended and retracted positions, the piston being pivotally connected to the base and to at least one the first and second connecting members, and wherein the step of moving the carriage relative to the base from the first position to the second position  
15 occurs in response to movement of the piston between its retracted and extended positions.

12. A method in accordance with claim 11 wherein the piston constitutes a first piston and the step of providing the blow molding apparatus occurs in a manner such that the  
20 blow molding apparatus comprises a second fluid actuated piston, the second piston being movable between extended and retracted positions, and wherein the step of moving the carriage relative to the base from the first position to the

second position comprises moving the second piston between its retracted and extended positions, the second piston moving from its extended position to its retracted position as the first piston moves from its retracted position to its extended position.

13. A method in accordance with claim 8 wherein the step of providing the blow molding apparatus occurs in a manner such that the blow molding apparatus comprises a rigid fluid conduit, the fluid conduit being operatively connected to the base in a manner such that the fluid conduit can pivot relative to the base, the fluid conduit also being operatively connected to the carriage in a manner such that the fluid conduit can pivot relative to the carriage, and wherein the step of moving the carriage in non-linear manner relative to the base from the first position to the second position causes the fluid conduit to pivot relative to the carriage and the base, the method further comprising providing fluid communication between the base and the carriage via the fluid conduit.

14. A method comprising:

providing a blow molding apparatus, the blow molding apparatus having a base, a blow molding extruder, a molding station, and a connecting member, the blow molding extruder

being mounted to the base and having a head that is configured and adapted to extrude parisons therefrom, the molding station comprising at least two mold components that together form a blow mold, the connecting member being pivotally connected to the molding station and to the base about first and second pivot axes respectively;

inserting a parison from the head of the blow molding extruder into the blow mold of the molding station with the molding station positioned in a first position relative to the base; and

moving the molding station from the first position by simultaneously pivoting the connecting member relative to the base and relative to the molding station.

15. A method in accordance with claim 14 wherein the molding station constitutes a first molding station and wherein the step of providing the blow molding apparatus occurs in a manner such that the blow molding apparatus comprises a second molding station, the second molding station comprising at least two mold components that together form a blow mold, the connecting member being pivotally connected to the second molding station, and wherein the step of moving the first molding station from the first position results in the first molding station being positioned at a second position relative to the base and comprises pivoting the connecting



member relative to the second molding station, the method further comprising inserting a parison from the head of the blow molding extruder into the blow mold of the second molding station with the first molding station positioned in the  
5 second position.

16. A method in accordance with claim 15 wherein the step of providing the blow molding apparatus occurs in a manner such that the blow molding apparatus comprises a carriage, the carriage pivotally connecting the first and  
10 second molding stations to the connecting member, and wherein the step of moving the first molding station from the first position comprises pivotally moving the carriage relative to the connecting member about the first axis.

17. A method in accordance with claim 16 wherein the  
15 step of providing the blow molding apparatus occurs in a manner such that the first and second molding stations are each movable relative to the carriage, and wherein the method further comprises moving the first and second molding stations relative to the carriage.

20 18. A method in accordance with claim 14 wherein the connecting member constitutes a first connecting member, and wherein step of providing the blow molding apparatus occurs in a manner such that the blow molding apparatus comprises a

second connecting member, the second connecting member being pivotally connected to the molding station and to the base about third and fourth pivot axes respectively, the first, second, third, and fourth pivot axes defining a first plane  
5 that includes the first and third axes and a parallel second plane that includes the second and fourth axes, and wherein the step of moving the molding station from the first position further comprises simultaneously pivoting the second connecting member relative to the base and relative to the  
10 molding station while maintaining the first and second planes parallel to each other.

19. A method in accordance with claim 18 wherein the step of providing the blow molding apparatus occurs in a manner such that the blow molding apparatus comprises a rigid  
15 fluid conduit, the fluid conduit being pivotally connected to the molding station about a fifth pivot axis and being pivotally connected to the base about a sixth pivot axis that intersects the second line, the first plane including the fifth pivot axis, the second plane including the sixth pivot  
20 axis, and wherein the step of moving the molding station from the first position further comprises simultaneously pivoting the fluid conduit relative to the base and relative to the molding station, the method further comprising providing fluid communication between the base and the molding station via the

fluid conduit.

20. A method in accordance with claim 18 wherein the step of providing the blow molding apparatus occurs in a manner such that the blow molding apparatus comprises a fluid  
5 actuated piston, the piston being movable between extended and retracted positions, the piston being pivotally connected to the base and to at least one the first and second connecting members, and wherein the step of moving the molding station from the first position occurs in response to movement of the  
10 piston between its retracted and extended positions.